

REMARKS

Claims 1, 13, 22, 27, 36, and 39 have been amended. Claims 1-8, 10-18, 20-22, 24, 26-30, 32-34, 36, and 39-43 remain in the application for consideration. In view of the following remarks, Applicant respectfully requests reconsideration
5 and allowance of the subject application.

Interview Summary

Applicant's Representative, Mark Niemann, wishes to thank Examiner Shew Fen Lin for the telephone interview conducted on March 16th, 2010.

10 During the interview, in the interest of advancing prosecution and without conceding the propriety of the rejection, Applicant's Representative and the Examiner discussed amending some of the claims to recite the notion of a "deployment agent" that comprises a "temporary operating system".

15 Examiner Lin indicated that the references of record did not appear to teach the subject matter of this amendment, but indicated that the allowance of the claims was subject to additional search and/or consideration. Accordingly, Applicant amends independent claims 1, 13, 22, and 27 in a manner that is consistent with the proposed amendments that were discussed during the interview and submits that claims 1, 13, 22, and 27 are in condition for allowance.

20 In addition, Examiner Lin agreed to call Applicant's Representative if any further issues that might delay issuance are discovered. Applicant greatly appreciates Examiner Lin's willingness to assist Applicant in advancing prosecution.

35 U.S.C. § 101 Rejections

25 Claims 39-43 stand rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter. Applicant submits that claim 39 recites "a controller, *stored on one or more computer-readable storage media* and configured to be implemented at least in part by at least one of one or more processors".

Accordingly, claim 39 is clearly directed to statutory subject matter. As such, Applicant requests that the 35 U.S.C. § 101 rejection of claims 39-43 be withdrawn.

5 **35 U.S.C. § 103 Rejections**

Claims 1-4, 6-8, 10-13, 15-18, 20, 21, 27-30, 32-34, and 36 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,976,062 to Denby et al. (“Denby”) in view of U.S. Patent No. 6,944,662 to Devine et al. (“Devine”).

10 Claims 22, 24, and 26 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Denby in view of U.S. Publication No. 2003/0005096 to Paul et al. (“Paul”) and further in view of Devine.

 Claims 5 and 14 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Denby in view of Devine and further in view of U.S.
15 Publication No. 2002/0191014 to Hsieh et al. (“Hsieh”).

 Claims 39-43 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Denby in view of Devine and further in view of U.S. Patent No. 6,421,777 to Pierre-Louis et al. (“Pierre-Louis”).

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The Claims

Claim 1 has been amended, and as amended, recites a method, implemented in a device, the method comprising (added language appears in bold italics):

- obtaining a task sequence at the device that describes a set of one or more steps to be carried out in managing multiple additional devices;
- generating a job tree at the device representing the set of one or more steps, the set of one or more steps configured to perform a method *comprising*:
 - *determining a hardware configuration of each of the multiple additional devices;*
 - *downloading a deployment agent to each of the multiple additional devices, the deployment agent comprising a temporary operating system that is designed for the particular hardware configuration of each of the multiple additional devices and includes functionality to enable an operating system to be installed on each of the multiple additional devices;*
 - downloading an operating system to the multiple additional devices; *and*
 - rebooting the multiple additional devices *into the operating system; and*
- sending one or more commands configured to carry out the set of one or more steps in accordance with the job tree, wherein the one or more commands are configured to carry out at least one of the one or more steps asynchronously for the multiple additional devices, and are configured to carry out at least one of the one or more steps concurrently for the multiple additional devices.

Claim 1 stands rejected as being unpatentable over Denby in view of Devine. Applicant submits that the combination of Denby and Devine does not teach or in any way suggest “wherein the one or more commands are configured to carry out at least one of the one or more steps *asynchronously* for the multiple additional devices, and are configured to carry out at least one of the one or more steps *concurrently* for the multiple additional devices”. In making out the

rejection the Office admits that Denby does not teach this claim feature. The Office argues, however, that Devine teaches this feature and that it would be obvious to combine Denby and Devine.

Devine describes the notion of synchronous and asynchronous “services”.

5 Devine does not, however, teach or in any way suggest one or more commands that are configured to “carry out *at least one of the one or more steps asynchronously* for the multiple additional devices, and are configured to carry out *at least one of the one or more steps concurrently* for the multiple additional devices”, as recited in claim 1. In other words, Devine simply describes that
10 services can either be completely synchronous or completely asynchronous, but does not mention that a service can include one or more commands that are “configured to carry out *at least one of the one or more steps asynchronously* for the multiple additional devices, and are configured to carry out *at least one of the one or more steps concurrently* for the multiple additional devices”. To this
15 extent, and as admitted by the Office, Denby adds nothing of significance.

However, in the interest of advancing prosecution and without conceding the propriety of the rejection, Applicant has amended claim 1 to recite “*downloading a deployment agent to each of the multiple additional devices, the deployment agent comprising a temporary operating system that is designed for*
20 *the particular hardware configuration of each of the multiple additional devices and includes functionality to enable an operating system to be installed on each of the multiple additional devices*”. Support for this amendment can be found throughout Applicant’s specification and at least at page 17, lines 12-19 and at page 18, lines 6-16, excerpts of which are reproduced below for convenience:

25 **Applicant’s Specification, Page 17, Lines 12-19, Emphasis Added**

Deployment agent builder service 224 then dynamically generates the deployment agent based on the hardware information it receives regarding the target device (act 346). *The deployment agent is dynamically*
30 *generated because it is designed for the particular hardware configuration of the target device.* It should be noted that deployment

agents may also optionally be cached (e.g., at network boot service 204 or in database 216), so that if multiple devices 102 happen to have the same hardware configuration, then the same deployment agent need not be generated multiple times.

Applicant's Specification, Page 18, Lines 6-16, Emphasis Added

The deployment agent is an operating system that includes sufficient functionality to allow a full operating system to be installed on the target device. The full operating system refers to the operating system that is being deployed on the target device by automated deployment service 200. The full operating system is typically stored in nonvolatile memory of the target device (e.g., a hard disk drive) and subsequently controls operation of the target device. In contrast, the deployment agent is a temporary operating system that is typically smaller than the full operating system, and that typically is not maintained in nonvolatile memory (e.g., is run from a RAM disk). The deployment agent includes device drivers to control the various hardware components of the target device, or at least those hardware components that are used during the installation process.

As discussed during the interview, Applicant submits that the combination of Denby and Devine does not disclose or in any way suggest “*downloading a deployment agent to each of the multiple additional devices, the deployment agent comprising a temporary operating system that is designed for the particular hardware configuration of each of the multiple additional devices and includes functionality to enable an operating system to be installed on each of the multiple additional devices*”, as recited in claim 1 as amended. More specifically, while Denby mentions upgrading an operating system, there is no mention in Denby of downloading a deployment agent that comprises a “*temporary operating system*” and “*downloading an operating system ... and rebooting the multiple additional devices into the operating system*”, as recited in claim 1 as amended. To this extent, Devine adds nothing of significance.

Accordingly, for at least the reasons discussed above, claim 1 is in condition for allowance.

Claims 2-8 and 10-12 depend from claim 1 and thus are allowable as depending from an allowable base claim. These claims are also allowable for their

own recited features which, in combination with those recited in claim 1, are neither disclosed nor suggested by the references of record. In addition, to the extent that claim 5 is further rejected in view of Hsieh, Applicant submits that Hsieh adds nothing of significance.

5 **Claim 13** has been amended, and as amended, recites one or more computer readable storage media having stored thereon a plurality of instructions that, when executed by one or more processors, causes the one or more processors to (added language appears in bold italics):

- 10 • receive a user-defined task sequence;
- convert the user-defined task sequence into an ordered series of steps, the ordered series of steps configured to perform ***a method comprising:***
 - 15 ○ ***determining a hardware configuration of multiple devices;***
 - ***downloading a deployment agent to each of the multiple devices, the deployment agent comprising a temporary operating system that is designed for the particular hardware configuration of each of the multiple devices and includes functionality to enable an operating system to be installed on each of the multiple devices;***
 - 20 ○ downloading an operating system to the multiple devices;
 and
 - rebooting the multiple devices ***into the operating system;***
 and
 - 25 • send one or more commands configured to perform the series of steps in managing the multiple devices over a network in accordance with their order, wherein the one or more commands are configured to perform at least one of the series of steps asynchronously for the multiple devices and are configured to perform at least one of the series of steps concurrently for the multiple devices.

 Claim 13 stands rejected as being unpatentable over Denby in view of Devine. Applicant submits that the combination of Denby and Devine does not
35 teach or in any way suggest “wherein the one or more commands are configured to perform at least one of the series of steps asynchronously for the multiple devices and are configured to perform at least one of the series of steps concurrently for

the multiple devices”, as recited in claim 13. However, in the interest of advancing prosecution and without conceding the propriety of the rejection, Applicant has amended claim 13 to recite “*determining a hardware configuration of multiple devices*” and “*downloading a deployment agent to each of the multiple devices, the deployment agent comprising a temporary operating system that is designed for the particular hardware configuration of each of the multiple devices and includes functionality to enable an operating system to be installed on each of the multiple devices*”. As discussed during the interview, the combination of Denby and Devine does not teach or in any way suggest the subject matter of this amendment.

Accordingly, for at least the reasons discussed above, claim 13 is in condition for allowance.

Claims 14-18, 20, and 21 depend from claim 13 and thus are allowable as depending from an allowable base claim. These claims are also allowable for their own recited features which, in combination with those recited in claim 13, are neither disclosed nor suggested by the references of record. In addition, to the extent that claim 14 is further rejected in view of Hsieh, Applicant submits that Hsieh adds nothing of significance.

Claim 22 has been amended, and as amended, recites a method implemented in a device, the method comprising (added language appears in bold italics):

- obtaining a user-defined task sequence at the device that describes actions to be carried out to automatically deploy an operating system to multiple additional devices;
- converting, at the device, the user-defined task sequence to a set of one or more steps of a job to be carried out to automatically deploy the operating system to the multiple additional devices, the set of one or more steps comprising:
 - *determining a hardware configuration of each of the multiple additional devices;*
 - *downloading a deployment agent to each of the multiple additional devices, the deployment agent comprising a*

temporary operating system that is designed for the particular hardware configuration of each of the multiple additional devices and includes one or more drivers that are configured to control hardware components on the multiple additional devices that can be used to deploy an operating system on each of the multiple additional devices;

- downloading an operating system to the multiple additional devices by copying an operating system image file to the multiple additional devices; *and*
- rebooting the multiple additional devices *into the operating system*; and
- sending one or more commands configured to carry out the one or more steps of the job, wherein the one or more commands are configured to carry out at least one of the one or more steps asynchronously for the multiple additional devices, and are configured to copy the operating system image file to the multiple additional devices concurrently.

Claim 22 stands rejected as being unpatentable over Denby in view of Paul and further in view of Devine. Applicant submits that the combination of Denby, Paul, and Devine does not teach or in any way suggest “wherein the one or more commands are configured to carry out at least one of the one or more steps asynchronously for the multiple additional devices, and are configured to copy the operating system image file to the multiple additional devices concurrently”, as recited in claim 22. More specifically, while Paul mentions the notion of an “image file” and Devine describes asynchronous and synchronous services, there is no mention in Paul or Devine of one or more commands that are configured to “carry out at least one of the one or more steps *asynchronously* for the multiple additional devices, and are configured to *copy the operating system image file to the multiple additional devices concurrently*”, as recited in claim 22.

However, in the interest of advancing prosecution and without conceding the propriety of the rejection, Applicant has amended claim 22 to recite “*determining a hardware configuration of each of the multiple additional devices*” and “*downloading a deployment agent to each of the multiple*

additional devices, the deployment agent comprising a temporary operating system that is designed for the particular hardware configuration of each of the multiple additional devices and includes one or more drivers that are configured to control hardware components on the multiple additional devices that can be

5 *used to deploy an operating system on each of the multiple additional devices”.*

Support for this amendment can be found throughout Applicant’s specification and at least at page 18, lines 6-16 which describes that “the deployment agent includes

device drivers to control the various hardware components of the target device, or at least those hardware components that are used during the installation

10 *process”.*

As discussed during the interview, the combination of Denby, Paul, and Devine does not teach or in any way suggest “a deployment agent”, as recited in claim 22 as amended. Further, the combination of Denby, Paul, and Devine does not disclose, teach, or in any way suggest that the deployment agent “*includes one*

15 *or more drivers that are configured to control hardware components on the multiple additional devices that can be used to deploy an operating system on each of the multiple additional devices”*, as recited in claim 22 as amended.

Accordingly, for at least the reasons discussed above, claim 22 is in condition for allowance.

20 **Claims 24 and 26** depend from claim 22 and thus are allowable as depending from an allowable base claim. These claims are also allowable for their own recited features which, in combination with those recited in claim 22, are neither disclosed nor suggested by the references of record.

Claim 27 has been amended, and as amended, recites one or more

25 computer readable storage media having stored thereon a plurality of instructions that, when executed by one or more processors, causes the one or more processors to (added language appears in bold italics):

- obtain a user-selected task sequence;

- convert the user-selected task sequence into an ordered series of steps, the ordered series of steps configured to automatically deploy an operating system to multiple devices, the ordered series of steps comprising:
 - *determining a hardware configuration of multiple devices;*
 - *downloading a deployment agent to each of the multiple devices, the deployment agent comprising a temporary operating system that is designed for the particular hardware configuration of each of the multiple devices and includes one or more drivers that are configured to control hardware components on the multiple devices that can be used to deploy an operating system on each of the multiple devices;*
 - downloading an operating system to the multiple devices;
and
 - rebooting the multiple devices *into the operating system*; and
- send one or more commands configured to perform the series of steps to automatically deploy the operating system to the multiple devices over a network in accordance with their order, wherein the one or more commands are configured to perform at least one of the series of steps asynchronously for the multiple devices and are configured to perform the step of downloading the operating system to the multiple devices in parallel.

Claim 27 stands rejected as being unpatentable over Denby in view of Devine. In making out the rejection of claim 27, the Office argues that claim 27 “is directed to a computer readable medium carrying instructions for performing the method of claim 1 and is therefore rejected along the same rationale” (*Office Action*, page 8). The Office has provided no further arguments to make out the rejection of claim 27. Applicant respectfully submits, however, that claim 27 recites features that are not recited in claim 1. For instance, claim 27 recites one or more commands that are configured to “*perform the step of downloading the operating system to the multiple devices in parallel*”. Applicant respectfully submits that the Office’s rejection of claim 27 is improper for at least the reason that the Office has not made out a rejection of this claim feature. Accordingly, for at least this reason claim 27 is in condition for allowance. Furthermore, Applicant

5 submits that the combination of Denby and Devine does not teach or in any way suggest “wherein the one or more commands are configured to perform at least one of the series of steps asynchronously for the multiple devices and are configured to perform the step of downloading the operating system to the multiple devices in parallel”, as recited in claim 27.

10 However, in the interest of advancing prosecution and without conceding the propriety of the rejection, Applicant has amended claim 27 to recite “*determining a hardware configuration of multiple devices*” and “*downloading a deployment agent to each of the multiple devices, the deployment agent comprising a temporary operating system that is designed for the particular hardware configuration of each of the multiple devices and includes one or more drivers that are configured to control hardware components on the multiple devices that can be used to deploy an operating system on each of the multiple devices*”. Support for this amendment can be found throughout Applicant’s specification and at least at page 18, lines 6-16 which describes that “the deployment agent includes *device drivers to control the various hardware components of the target device, or at least those hardware components that are used during the installation process*”.

20 As discussed during the interview, the combination of Denby and Devine does not teach or in any way suggest “a deployment agent”, as recited in claim 27 as amended. Further, the combination of Denby and Devine does not disclose, teach, or in any way suggest that the deployment agent “*includes one or more drivers that are configured to control hardware components on the multiple devices that can be used to deploy an operating system on each of the multiple devices*”, as recited in claim 27 as amended.

25 Accordingly, for at least the reasons discussed above, claim 27 is in condition for allowance.

Claims 28-30 and 32-34 depend from claim 27 and thus are allowable as depending from an allowable base claim. These claims are also allowable for their

own recited features which, in combination with those recited in claim 27, are neither disclosed nor suggested by the references of record.

Claim 36 has been amended, and as amended recites a system comprising:

- a processor; and
- a memory embodying instructions configured to:
 - obtain a task sequence that describes a set of one or more steps to be carried out to automatically deploy an operating system to multiple devices;
 - generate a job representation of the set of one or more steps, the set of one or more steps comprising:
 - downloading an operating system to the multiple devices by copying an operating system image file to the multiple additional devices;
 - rebooting the multiple devices; and
 - configuring the operating system of the multiple devices; and
 - send one or more commands configured to carry out the set of one or more steps in accordance with the job representation, wherein the one or more commands are configured to carry out the steps of rebooting and configuring the operating system asynchronously for the multiple devices, and are configured to copy the operating system image file to the multiple devices concurrently.

Claim 36 stands rejected as being unpatentable over Denby in view of Devine. In making out the rejection of claim 36, the Office argues that claim 36 “is directed to a system claim carrying instructions for performing the methods of claim 1 and is rejected along the same rationale” (*Office Action*, page 9). The Office has provided no further arguments to make out the rejection of claim 36. Applicant respectfully submits, however, that claim 36 recites features that are not recited in claim 1. For instance, claim 36 recites one or more commands that are configured to “carry out the steps of rebooting and configuring the operating system asynchronously for the multiple devices, and are configured to copy the operating system image file to the multiple devices concurrently”. Applicant respectfully submits that the Office’s rejection of claim 36 is improper for at least

the reason that the Office has not made out a rejection of this claim feature. Accordingly, for at least this reason claim 36 is in condition for allowance.

Furthermore, Applicant submits that the combination of Denby and Devine does not in fact teach or in any way suggest one or more commands that are configured to “carry out the steps of rebooting and configuring the operating system asynchronously for the multiple devices, and are configured to copy the operating system image file to the multiple devices concurrently”, as recited in claim 36. More specifically, neither Denby nor Devine discloses or suggests copying an “*operating system image file* to the multiple devices *concurrently*”, as recited in claim 36.

Furthermore, although Denby mentions a “software *upgrade* utility” that allows a user to “*upgrade* the operating system, firmware, application and data files of any product” (*Denby*, column 2, lines 23-26), Denby does not teach or suggest “obtain a task sequence that describes a set of one or more steps to be carried out *to automatically deploy an operating system to multiple devices*”, as recited in claim 36. To this extent, Devine adds nothing of significance.

Accordingly, for at least the reasons discussed above, claim 36 is in condition for allowance.

Claim 39 has been amended, and as amended, recites a system comprising:

- a controller, stored on one or more computer-readable storage media configured to be implemented at least in part by at least one of one or more processors to obtain a task sequence that describes one or more steps to be performed on multiple remote devices and to generate a job representation of the one or more steps, the one or more steps configured to perform at least one of:
 - downloading an operating system to the multiple remote devices;
 - rebooting the multiple remote devices; *and*
 - configuring the operating system of the multiple remote devices; and
- a network boot service, configured to be implemented at least in part by at least one of the one or more processors to detect when the

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multiple remote devices are coupled to a network that the system is also coupled to, and to communicate with the controller to determine which of the steps of the job representation are to be carried out in response to the detection, wherein at least one of the one or more steps are configured to be carried out asynchronously for the multiple remote devices, and at least one of the one or more steps are configured to be carried out concurrently for the multiple remote devices.

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Claim 39 stands rejected as being unpatentable over the combination of Denby, Devine, and Pierre-Louis.

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Applicant submits that the combination of Denby, Devine, and Pierre-Louis does not teach or in any way suggest “wherein at least one of the one or more steps are configured to be carried out asynchronously for the multiple remote devices, and at least one of the one or more steps are configured to be carried out concurrently for the multiple remote devices”, as recited in claim 39.

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Furthermore, although Denby mentions a “software *upgrade* utility” that allows a user to “*upgrade* the operating system, firmware, application and data files of any product” (*Denby*, column 2, lines 23-26), Denby does not teach or suggest “one or more steps configured to perform at least one of: *downloading* an operating system to the multiple remote devices”, as recited in claim 39. To this extent, Devine and Pierre-Louis add nothing of significance.

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Accordingly, for at least the reasons discussed above, claim 39 is in condition for allowance.

Claims 40-43 depend from claim 39 and thus are allowable as depending from an allowable base claim. These claims are also allowable for their own recited features which, in combination with those recited in claim 39, are neither disclosed nor suggested by the references of record.

Conclusion

All of the claims are in condition for allowance. Accordingly, Applicant requests reconsideration and issuance of a Notice of Allowability. If the Office's next anticipated action is to be anything other than issuance of a Notice of Allowability, Applicant respectfully requests a telephone call for the purpose of scheduling an interview.

Respectfully Submitted,

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By: /Mark F. Niemann/

Mark F. Niemann
Reg. No. 61,817
Microsoft Corporation
One Microsoft Way
Redmond, WA 98052